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Transcatheter embolization of multiple intra-pulmonary arterio-venous fistulae with Amplatzer vascular plugs

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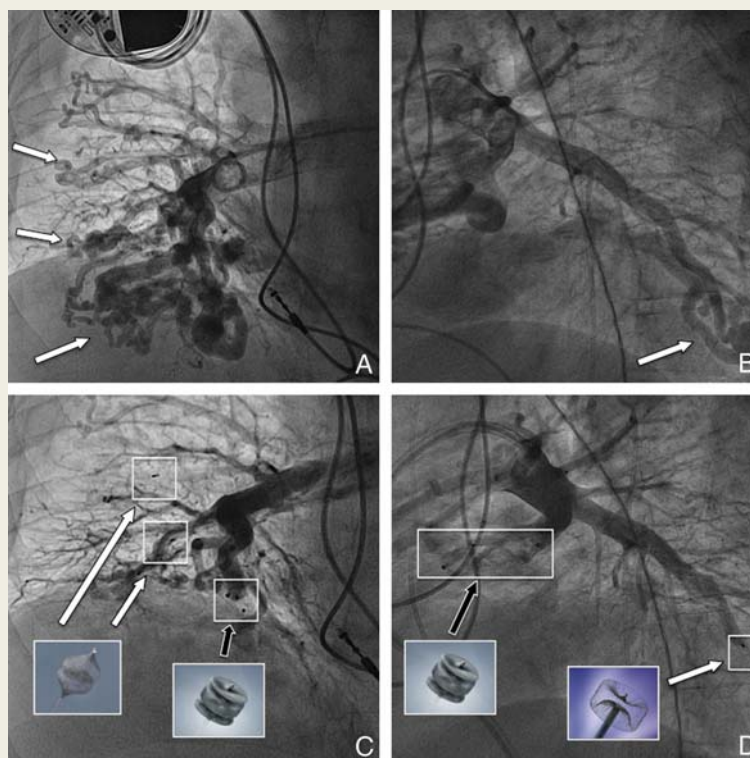
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A 56-year-old male was referred for percutaneous treatment of multiple-symptomatic persistent pulmonary arterio-venous fistulae (PAVFs). The patient's history included surgical repair of a secundum-type atrial septal defect with closure of right lung PAVFs in 1961, repeat transcatheter radiofrequency ablations for recurrent episodes of intra-atrial re-entrant tachycardia, and implantation of a transvenous dual-chamber pacemaker for sick sinus syndrome in 2002. Over the subsequent years, he had developed progressive cyanosis and dyspnoea (NYHA II–III) with arterial desaturation from 89 to 81% during exercise, indicating significant right-to-left shunt.

Selective pulmonary angiography revealed extensive PAVFs of the right lung, with major PAVFs identified in the middle (Panel A, arrows) and the lower lobes (Panel B, arrow). Major PAVFs were selectively engaged with a 5 F coronary Judkins right or multipurpose catheter. In the lateral and the medial segments of the middle pulmonary lobe, 6- and 8-mm amplatzer vascular plugs (AVPs) IV were used for the PAVFs, respectively (Panel C, white arrows), while a 6-mm AVP I was placed in the posterobasal segment of the right lower lobe (Panel D, white arrow). The largest PAVF in the middle pulmonary lobe was sealed with a 12-mm AVP II (Panels C and D, black arrow). Control angiography documented complete occlusion of all the PAVFs (Panels C and D). Upon deployment of all the AVPs, arterial oxygen saturation improved from 90 to 95% at rest, and in the pulmonary artery, from 64 to 70%. The patient's post-procedural recovery was uneventful and his peripheral saturation remained stable during the 2 days prior to discharge.

The case presented in this article demonstrates that transcatheter occlusion of multiple PAVFs using AVPs is a feasible and valuable alternative to surgical lobectomy and has a high procedural success rate.



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